

PTO 06-2738

French Patent No. 2 565 658

MIXING DEVICE FOR SANITARY FAUCET

Alain Domergue

UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. MARCH 2006  
TRANSLATED BY THE MCELROY TRANSLATION COMPANY

REPUBLIC OF FRANCE  
MINISTRY OF INDUSTRY AND COMMERCE  
DIRECTORATE OF INDUSTRIAL PROPERTY  
FRENCH PATENT NO. 2 565 658 A1

Int. Cl.<sup>4</sup>: F 16 K 11/22  
31/53

Filing Date: June 7, 1984

Date of Publication of the Application: BOPI "Brevets" No. 50  
December 13, 1985

MIXING DEVICE FOR SANITARY FAUCET

[Dispositif mélangeur pour robinetterie sanitaire]

Inventor: Alain Domergue

Applicant: Joint-Stock Company known as:  
GROUPE DESIGN MBD. - FR

The present invention relates to a mixing device for a sanitary faucet.

In the field of sanitary faucets, it is known to use the unit cartridge, which comprises a quarter-turn driving mechanism with ceramic plates in a cage with lateral slits.

The invention uses this type of unit cartridge by arranging it to construct a single-hole mixing device on a rim which reveals, except for the operating devices, only a base of very small dimensions and, naturally, the discharge valve.

According to the invention, two unit cartridges of the above type, inside the sanitary apparatus in question, are connected, one the one hand, together to form a fluid circulation, and, on the other hand, each is connected separately to an independent driving mechanism, where the circulation of fluid opens to the outside in the discharge spout, and the two driving mechanisms are controlled, also from the outside, by two separate operating devices.

The two unit cartridges are combined in a sealed block.

The two operating devices are control levers with concentric sleeves around a single fluid outlet tube.

Naturally, one of the cartridges receives cold water while the other cartridge receives hot water.

As a result of this arrangement with control levers having concentric sleeves, a single turn is sufficient to obtain unmixed water and a single opening turn followed by a regulation is sufficient to obtain mixed water, while in the known mixing devices, three turns, two for opening and one for regulation, are required to obtain mixed water.

Other characteristics and advantages of the present invention will become apparent in the following description which is made with reference to the drawings in the appendix in which:

- Figure 1 is an elevated view of the device according to the invention;
- Figure 2 is a perspective view, with partial exploded view, of this same device, but without the discharging spout and without the flexible hot water and cold water inlet tubes;
- Figure 3 is an exploded perspective view showing particularly the block comprising the two unit cartridges.

In the represented embodiment, a mixing device for a sanitary faucet according to the invention comprises two unit cartridges (20), each comprising a quarter-turn driving mechanism (6) with ceramic plates or other materials in a cage (21).

The two unit cartridges are joined to form a fluid circulation in a sealed block (22) in three parts; one part forming the supply stage (12), showing the hot water and cold water inlets with the tubes (14); one part forming a body (7), which uncovers the driving part (6) of the cartridges, and one common central part (23) which opens towards the outlet tube (1) and the discharging spout or other outlets, which can be of any shape, and a part forming a support (11), the entire assembly being fastened by screws (13).

The driving devices are each connected mechanically to an axle, on which a gear system is wedged, arranged in the support (11).

Each gear system engages with a toothed sector that is born by a concentric sleeve at the outlet tube.

The gear system (24) which is wedged on the axle (25) engages with a sector (26), which is carried by an external sleeve (5).

The gear system (27), which is wedged on the axle (28), engages with a sector (29), which is carried by an internal sleeve (3).

A dimpling (30) of the external sleeve (5) allows the displacement of the sector (29) which is carried by the internal sleeve (3), so that the two sectors are in the same plane (in this case the horizontal plane).

Each sleeve is provided with a handle or control lever for operating.

The external sleeve (5) shows a control lever (4) and the internal sleeve (3) a control lever (2), and the two control levers are addressed in the same plane (in this instance the vertical plane).

The device is completed by a rose-shaped base (8), a raising ring (9), and a support counter ring (10).

Finally, the present invention was naturally described and represented only in the form of a preferred example, and equivalent changes can be made to the constitutive elements without exceeding the extent of the invention.

### Claims

1. Mixing tube for a sanitary faucet, characterized in that it comprises two unit cartridges (20) of the type comprising a quarter-turn driving mechanism (6) with ceramic plates or other materials in a cage (21), where said cartridges (20), inside the sanitary apparatus in question, are connected, on the one hand, together to form a fluid circulation, and, on the other hand, each is connected separately to an independent driving mechanism (5-26-24-25-6) (3-29-27-28-6), where the fluid circulation opens to the outside in the discharging spout and the two driving mechanisms are controlled, also from the outside, by two separate operating devices (4) (2).

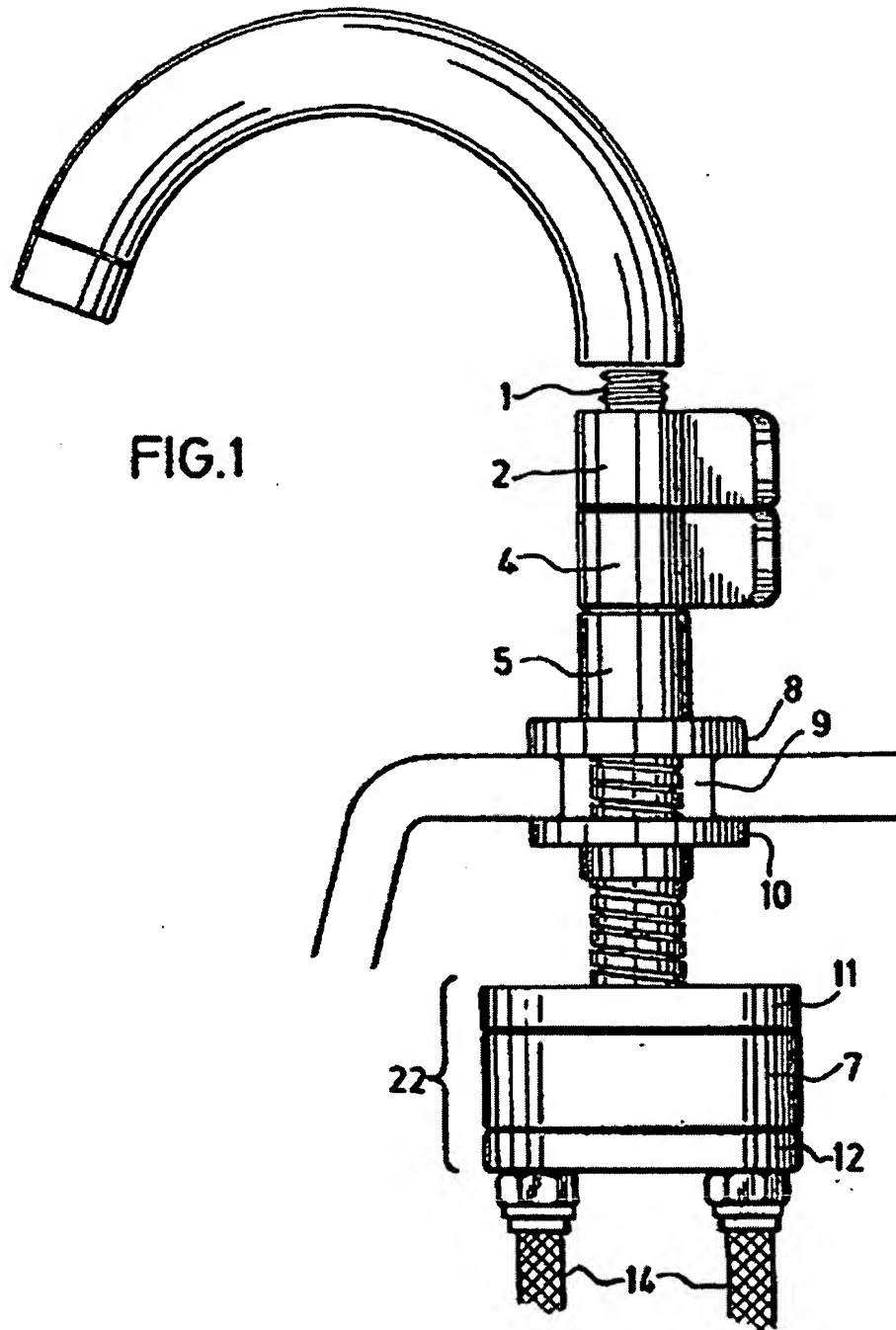
2. Device according to Claim 1, characterized in that the two unit cartridges (20) are connected to form a fluid circulation and they are connected mechanically to the outside in a sealed block (12-7-11).

3. Device according to any one of Claims 1 and 2, characterized in that the two operating devices are control levers (4) (2) with concentric sleeves (5) (3) around a single fluid outlet (23-1).

4. Device according to any one of Claims 1-3, characterized in that the driving mechanisms (6) of the cartridges (20) are each connected mechanically to an axle (25) (28) on which a gear system (24) (27) is wedged, and each gear system engages with a sector (26) (29), which is carried by a concentric sleeve (53).

5. Device according to Claim 4, characterized in that a short section (30) of the external concentric sleeve (5) allows the displacement of the sector (29), which is carried by the internal concentric sleeve (3), so that the two sectors (26) (29) are in the same plane.

6. Device according to any one of Claims 4 and 5, characterized in that each sleeve (5) (3) is provided with an operating handle or control lever (4) (2), where the two control levers at rest are in the same plane.



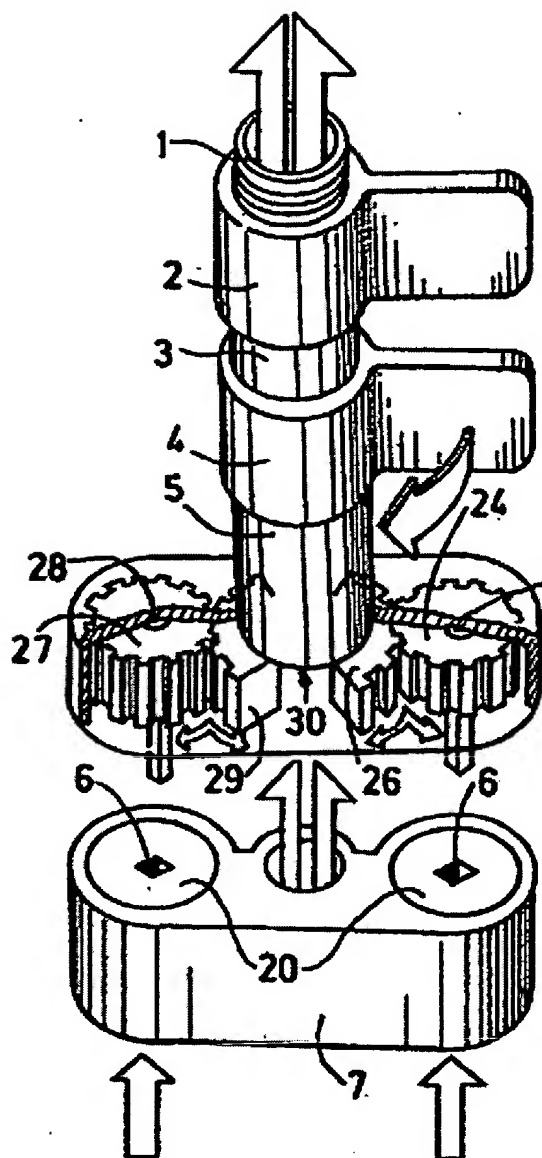


FIG. 2

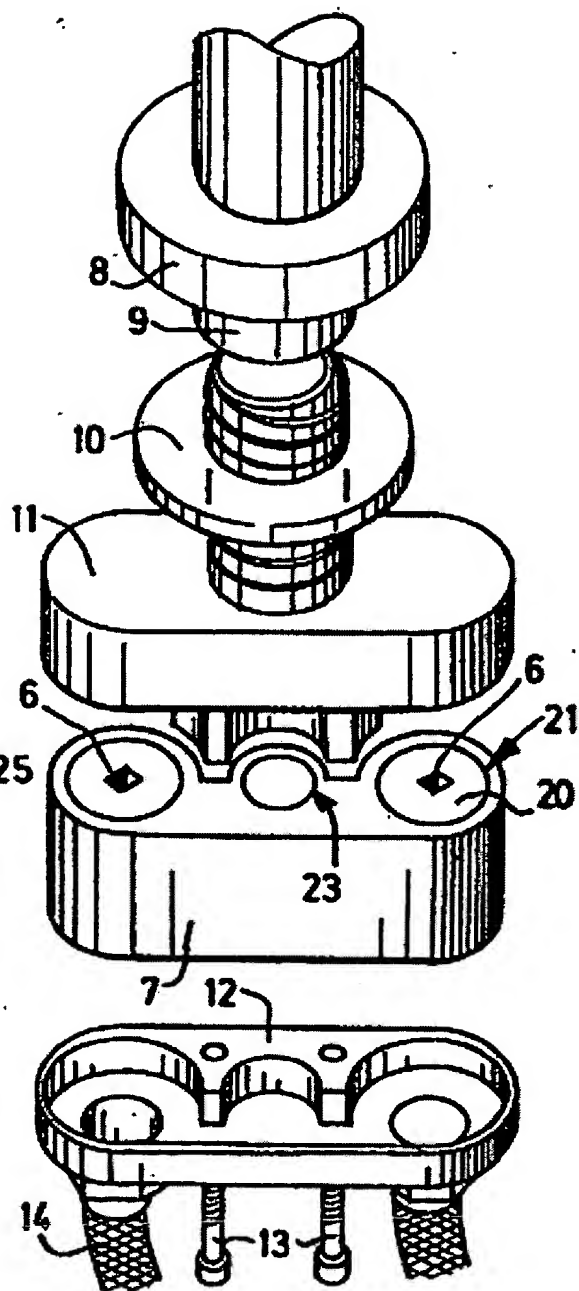


FIG. 3